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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/608,088	06/30/2003	Felix Buechi	2003P09049US	8074
28204 7590 07/27/2007 SIEMENS SCHWEIZ AG I-47, INTELLECTUAL PROPERTY ALBISRIEDERSTRASSE 245 ZURICH, CH-8047 SWITZERLAND			EXAMINER CANTELMO, GREGG	
			ART UNIT 1745	PAPER NUMBER
			MAIL DATE 07/27/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/608,088	Applicant(s) BUECHI ET AL.	
	Examiner Gregg Cantelmo	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-23 is/are pending in the application.
- 4a) Of the above claim(s) is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 1,3-10 and 12-23 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. .
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u> </u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u> </u> | 6) <input type="checkbox"/> Other: <u> </u> |

DETAILED ACTION

Response to Amendment

1. In response to the amendment received May 16, 2007:

- a. Claims 1, 3-10, 12-23 are pending;
- b. The previous rejections stand.

Claim Rejections - 35 USC § 102

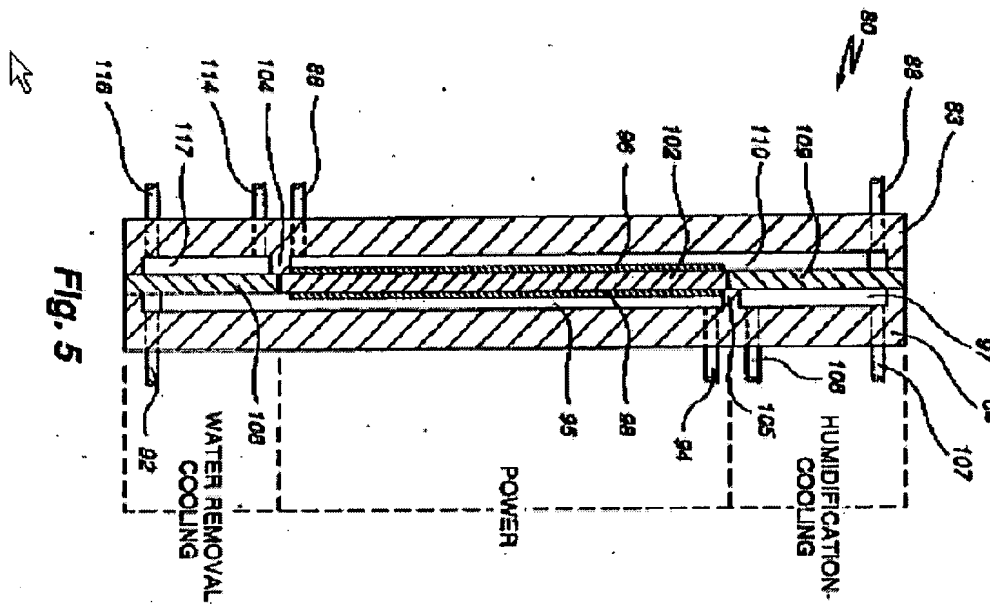
2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3-10, and 12-23 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,973,530 (Vanderborgh).

Vanderborgh discloses a method of providing humidity to an electrolyte membrane 102 of a fuel cell 80 the membrane running between a cell anode area and cell cathode area, comprising the step of exchanging humidity from humidified oxidant and humidified cooling flown on the cathode side through regions 97 and 95 through membranes 109, 102 and 108 into the fluids flowing in regions 117 and 110 of the anode side (Fig. 5 and col. 8, line 34 through col. 9, line 47 as applied to claim 1). Fluid is thus routed from one of the anode/cathode sides, through the permeable membranes 109, 102 and 108 (thus to the opposite side of the permeable membranes) and eventually discharged from the fuel cell shown in Fig. 5 (as applied to claim 1).



The humidified fluids are routed on opposite sides of the membrane via humidity-permeable membranes 109, 102 and 108 and are discharged from the fuel cell after passing through the membranes via outlets 88 and 104.

The fluid flow is at least one of the same, opposite or cross-current-routed direction flow (Figs. 5 and 6A-6C as applied to claim 3).

The fuel cell depicted in Figs. 5 and 6A-6C is disclosed as being configured in a stack and thus each cell in the stack would have the same separate flow channels and pervious membranes as shown in Figs. 5 and 6A-6C (col. 4, ll. 36-60; col. 9, ll. 48-57 as applied to claims 4-9).

The apparatus shown in Figs. 5 and 6A-6C include a cathode area, anode area, electrolyte membrane 102, inflow lines 86, 116, 105 and 94 for accommodating fluid to the cathode and anode areas, outflow lines 88, 114, 107 and 92 for accommodating fluid from the cathode and anode areas, and humidity exchangers 109, 102 and 108

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associated with the cathode and anode areas and positioned along one of the inflow and outflow lines with the exchanger providing humidification between the cathode and anode areas (Fig. 5 as applied to claim 10). The humidity exchanger comprises a humidifying and dehumidifying zone separated by pervious membranes 109, 102 and 108 wherein inflow lines are positioned in the humidifying zone and outflow lines are positioned in the dehumidifying zone (Fig. 5 as applied to claim 10).

The fuel cell includes an electrolyte membrane 102 and membranes 108 and 109 which are "substantially similar" materials with respect to being pervious to humidity (as applied to claim 12).

The electrolyte membrane 102 and humidity pervious membranes 108 and 109 combine in the same plane to form different portions of a continuous membrane (Fig. 5 as applied to claim 13).

The fuel cell depicted in Figs. 5 and 6A-6C is disclosed as being configured in a stack and thus each cell in the stack would have the same separate flow channels and pervious membranes as shown in Figs. 5 and 6A-6C (col. 4, ll. 36-60; col. 9, ll. 48-57 as applied to claims 14-23).

Response to Arguments

3. Applicant's arguments filed May 16, 2007 have been fully considered but they are not persuasive.

Applicant argues that Vanderborgh does not disclose or suggest charging a fluid as recited in the independent claims.

The examiner respectfully disagrees.

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As discussed in Vanderborgh water is transported across the membrane 102 from the anode side to the cathode side 95 (col. 8, ll. 62-65). Thus humidity is clearly exchanged from the anode side to the cathode side through the membrane 102 and thus adds (or charges) the cathode side with water.

Therefore, contrary to Applicant's assertion, it is apparent that the prior art teachings of Vanderborgh discloses charging the cathode fluid with water from the anode fluid by flowing water through the membrane 102 which separates the cathode and anode flow channels. Furthermore Vanderborgh teaches the remaining features of the claims as discussed above and thus still reasonably anticipate the claimed invention.

While Applicant recites various aspects of the disclosure of the specification (page 8, last paragraph) Applicant is reminded that it is the claims and not the disclosure of the specification that has been analyzed relative to the teachings of the prior art of record and while the specification recites additional aspects of Applicant's invention, only those features recited in the claims have been analyzed for patentability.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregg Cantelmo whose telephone number is 571-272-1283. The examiner can normally be reached on Monday to Thursday, 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



gc
July 25, 2007

Gregg Cantelmo
Primary Examiner
Art Unit 1745